FTIR spectroscopy and Optical microscopy of pottery shards from Conjunto Villas and São João sites, Middle Solimões region (AM)

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Pottery shards are one of the most fascinating and durable artifacts made by the prehistoric and historic communities. These ceramics artifacts were used as mortuary urns and for cooking and conserving food in a domestic context by practically all cultures around the world. Ceramic material has several macroscopic and microscopic attributes of interest to physicists and archaeologists such as shape and surface decoration, that are frequently used as cultural and chronological indicators. Archaeometric analyses of pastes are fundamental to the classification and characterization of ceramics, providing relevant data about their production, function and social meaning. So many kinds of ceramics are found in archaeological excavations, and those artifacts are obtained in good quantities due to the importance to these ancient civilizations. Therefore, it is important to understand this typological and structural variability, to classify according to their usefulness for such communities. In Brazil, the Amazon region is the richest in terms of pre-colonial indigenous culture. At the end of the 15th century, this region was densely occupied by different indigenous peoples. It is nowadays observed that there is a great presence of similar technological and morphological attributes throughout the Amazon region, especially ceramics of Polychrome Tradition that uses several colors of pigments in the artifacts. The aim of this archaeometric study is to obtain the mineralogical composition of the pottery shards of Conjunto Villas e São João archaeological sites, located at in the macro-region of Middle Solimões, Amazonas, Brazil. The ceramic materials were studied by Fourier Transform Infrared Spectroscopy (FTIR) and Optical Microscopy. Images microscopic show of the presence of antiplastics cauíx and caraípê, as well as minerals in the crystalline form. FTIR measurements indicate the presence of siloxane groups and differences in composition with minerals such as: Quartz, Kaolinite, Hematite, Anorthite, and Microcline. These results will contribute to map the chemical composition of the ceramics, the manufacturing techniques, the firing temperature and the purpose of using these objects.